TRACK

Introduction

During 1996 and early 1997, FRA and State Track Inspectors conducted a series of field observations on a variety of CSXT lines. They identified a number of problems regarding the maintenance of track and roadbed. A comprehensive report of their findings was compiled and formally presented to the CSXT Chief of Track Maintenance in Jacksonville, Florida.

In July 1997, the various engineering department issues were folded into an already ongoing Safety Assurance and Compliance Program (SACP) involving the other four technical disciplines. FRA selected 20 subdivisions as a representative sample of the entire system. These subdivisions were selected based on input from the FRA Regional Specialists, and analyses of track-caused derailments and rail defect histories. During July through August, FRA and State personnel inspected the 20 subdivisions, to determine the extent of the previously identified track and roadbed defects.

They also conducted a listening session with representatives of the Brotherhood of Maintenance-of-Way Employees (BMWE). At the listening session, participants agreed to form partnerships to address several issues and programs, including the Track Authority Team, Roadway Worker Program, Roadway Worker Training Manual, and the Track Inspector Call-In Survey.

During their investigations in the field and at the CSXT Jacksonville headquarters, the FRA/State SACP team identified six principle safety issues, which are discussed in this report.

In some instances, CSXT has already begun to respond to FRA's concerns with corrective measures. In response to FRA's concerns regarding track maintenance on curves, CSXT identified and replaced 3,367 worn cross ties and 3.5 miles of rail.

Concerns, Discussion, and Recommendations

Concern: Track Inspection Program

FRA found that track inspections were not being performed adequately to detect exceptions to Track Safety Standards, and that CSXT management was not overseeing the inspection program to ensure quality inspections were performed and appropriate remedial actions were taken.

Discussion:

FRA performed field inspections of the 20 sample subdivisions as part of the SACP process, and compared inspection results to CSXT's track inspection records. Sample subdivisions had been selected based on high incidences of defects and/or occurrence of serious defects. Record reviews were made at the appropriate division offices for the selected subdivisions.

The reviews revealed that in approximately 20 percent of all cases, CSXT records did not accurately reflect the existing track conditions. Among the defective track conditions omitted from track inspection records were defective cross ties, fouled ballast, defective rail fasteners, and turnout-related defects.

FRA believes that supervision oversight and management of the track inspection program on these five subdivisions is inadequate. Supervisors are not ensuring that Inspectors are making an adequate inspection and implementing the appropriate remedial action. Management should have noted that records were not being filed properly.

Recommendation:

CSXT should continue to identify problem areas in its track inspection program, particularly inspector training and supervision, and take steps to eliminate problems.

Concern: Saturated Subgrade/Fouled Ballast

Subgrade and ballast sections are being compromised by water saturation, resulting in track geometry deviations and deterioration of track structure.

Discussion:

FRA Inspectors performed field inspections and reviewed the latest records of both the TGC2 geometry car and Gage Restraint Measurement System (GRMS), an automated split-axle device (usually attached to a hi-rail or rail car) that measures the geometric integrity of the track structure.

The field inspections showed numerous locations of saturated subgrade and/or fouled ballast taken as exceptions to 49 CFR Part 213 on 13 of the 20 sample subdivisions. Inspectors noted other areas of concern due to muddy conditions, on several more subdivisions, which caused track geometry deviations, cross tie abrasion, and center breaks in concrete cross ties.

The test car data indicated that recurring subgrade problems existed at some subdivisions. Although the maintenance personnel had corrected deficiencies at locations detected by the test car, subsequent tests showed more defects of the same types. This seems to indicate extensive subgrade and drainage problems in the track structure at the subject locations.

Recommendations:

- CSXT should immediately survey its tracks and determine the locations of subgrade saturation and fouled ballast.

- CSXT should prioritize the locations, schedule repairs, develop an action plan, and immediately initiate corrective actions.

Concern: Vegetation

Vegetation is spreading onto the right-of-way and into pole lines, virtually unchecked. At many locations, it is hitting the sides of rolling stock, blocking the view of wayside signs and signals, and affecting the proper function of signal and communication lines.

Discussion:

Prior to the start of this project, FRA Inspectors had observed increasing instances of excessive vegetation along CSXT rights of way. In Virginia, an FRA S&TC Inspector cited 28 violations for vegetation encroaching on signal and communication lines, affecting their proper functioning.

During this project, FRA and State Inspectors in the field observed numerous instances of excessive vegetation in pole lines. Several Inspectors also cited numerous locations on main tracks where trees and brush were hitting the sides of rolling stock. All these observations were made across the system, on several operating divisions.

It did not appear that CSXT had a significant program in effect to address the increasing vegetation problem adequately. The local maintenance forces were not able to make any meaningful progress on the problem due to their limited size and lack of effective equipment and operators.

FRA noted instances of vegetation blocking the view of mileposts, which are sometimes used to define work limits. This creates a safety hazard for roadway workers who depend on the mileposts for protection from approaching trains, whose Locomotive Engineers might fail to see the obscured mileposts.

Recommendation:

CSXT should develop an Action Plan to survey the property to identify all locations affected by excessive vegetation growth, prioritize all locations, and institute a comprehensive, large scale brush control program. CSXT should pursue such a program until the problem is corrected. Subsequent annual maintenance programs should include a sufficient amount of brush control to prevent the present situation from recurring.

Concern: On-Track Safety

FRA observed that CSXT field staff often incorrectly interpret and apply provisions of 49 CFR Part 214, Roadway Worker Protection. In addition, FRA observed that trains did not blow horns as required when approaching roadway workers near the track.

Discussion:

Field observations made during this project revealed some interpretations and applications of Part 214 which were in error. In particular, some roadway workers were working on one track in multiple track territory, but fouling another track without having established on-track safety on the adjacent track.

If work activities present the possibility of fouling an adjacent track at any time, then procedures must be established for that track as well. Safety precautions could include assigning a watchman, or utilizing foul time or a track outage.

FRA believes that CSXT is not providing adequate on-track safety training to employees. CSXT has established a "Train the Trainer" program, through which selected employees are given detailed training in 49 CFR Part 214. These employees are then charged with passing along this newly acquired knowledge to their fellow employees in local training sessions. CSXT has no review process to assure that trainers are effectively providing the necessary training to employees.

A review of the CSXT Roadway Worker Safety Program, by a team consisting of BRS, FRA, CSXT, and BMWE representatives, revealed several other areas of concern:

- The 15-second warning, required to alert roadway workers to approaching trains, is not provided consistently. The warning must be given sufficiently in advance of the approaching movement to assure that each employee being protected by the train approach warning can be in the clear at a previously arranged place of safety.

- FRA noted that the Facilitator's Guide did not clearly emphasize that a lone worker has the absolute right to utilize a higher level of protection than individual train detection any time the lone worker deems appropriate.

- On several occasions, trains were observed not blowing their horns when

approaching or passing roadway workers standing near the track. The rule requires this for all roadway workers "on or about the track," even if they are not within the 4-foot fouling envelope.

! FRA observed Work Gangs whose Watchmen or Lookouts did not have the equipment necessary to provide adequate audible and visual warning.

! FRA noted locations where mileposts were found knocked down or missing, or obscured by brush. When mileposts are used to define work limits, they must be clearly visible to train crews.

Recommendations:

! CSXT managers should critically review the company's training program for on-track safety, and immediately institute corrections to eliminate the misinformation. The corrected information should be immediately distributed to all employees who already have received the training.

! All train and engine service personnel should receive instructions immediately that they must comply with the horn blowing requirement. The operating rules and efficiency test programs should be modified to include this requirement.

! All mileposts should be re-installed as soon as possible and made clearly visible from both directions. In the meantime, only visible mileposts should be used for roadway worker protection.

Concern: Test Car Operation

CSXT field personnel are not following carrier procedures in protecting, verifying, and correcting detected exceptions.

Discussion:

CSXT procedures require that exceptions found by the GRMS be protected and/or corrected immediately following their discovery. Locations where procedures have not been followed have been identified. During FRA inspections, defects were cited which

the GRMS car had identified in a recent test, indicating insufficient remedial action had been taken.
FRA found instances in which sufficient remedial action had not been taken in response to identification of track defects by GRMS. For example, while slow orders were appropriately placed in response to gage deviations, proper track repairs did not always occur, resulting in further gage deterioration.

Recommendation:

CSXT should examine its procedures regarding test car operations. In response to exceptions noted, CSXT should correct the procedures if necessary, and re-emphasize to field personnel the importance of compliance with rules and standards.

Concern: Procedure Manual and Practices

FRA found that CSXT's track department was not abiding by the CSXT Procedure Manual's guidelines.

Discussion:

A review was made of the CSXT Maintenance-of-Way Regulations and Instructions Manual, dated June 30, 1997, which had been issued by the Office of Equipment and Track Systems Engineer. The Manual appears to be a complete, comprehensive, and detailed collection of CSXT track maintenance procedures and practices. However, field investigations and interviews indicated that compliance with CSXT's own maintenance procedures has not been accomplished.

For example, the Manual requires ties to be box-anchored 234 feet in each direction from joints, turnouts, railroad crossings, highway-rail grade crossings over 50 feet in length, and open deck bridge approaches in CWR track. This requirement does not apply to joints which are to be promptly welded. However, FRA found that joints are remaining in the track for extended periods without welding or proper anchoring. Field observations also revealed a failure to comply with CSXT anchoring requirements in numerous locations.

Recommendation:

CSXT should investigate the extent of non-compliance with its procedures, and develop a Safety Action Plan that provides the management oversight needed to ensure compliance with track maintenance standards.

Concern: System Support for Local Forces

During field inspections, FRA discovered that local maintenance forces were unable to properly maintain track to its intended class. Some conditions, such as saturated subgrade, excessive vegetation, and defective cross ties, were much too extensive for local maintenance-of-way forces to correct.

In one subdivision, two tie replacement production cycles (Fall 1995 and Spring 1996) were postponed over a 13-month period. In other locations, similar delays have led to non-compliant tie conditions.

Another subdivision was found to have numerous muddy areas with no program scheduled to undercut or plow these areas. The local Roadmaster tries to correct this type of problem with his/her small section gangs.

Field observations indicated that numerous positions, including supervisory and maintenance positions, have remained vacant for an extended period of time. Limited staff has reduced CSXT's ability to maintain track to the intended class. Some miscellaneous examples of labor and equipment shortages found during the field observations included:

- A burro crane, shared by two Roadmasters in the Chicago area, which has not operated in six months due to a bent boom;
- Two gangs which did not have hi-rail trucks; and
- A subdivision where local track maintenance forces were diverted to a 31-day rail change-out gang.

Recommendation:

CSXT should develop an Action Plan to evaluate staffing levels in the track department

and establish positions as needed. CSXT officials have indicated that to date, they have hired 60 new employees, recalled approximately 50 furloughed employees, and are continuing hiring efforts to fill identified shortfall areas.

Concern: Structures

CSXT bridges, tunnels, and culverts may not be inspected in a timely manner and in accordance with current CSXT maintenance-of-way instructions. Items needing correction are not being brought to the attention of the appropriate officials.

Discussion:

CSXT has approximately 11,000 bridge structures which are owned, maintained, and inspected by the carrier bridge forces. In addition, CSXT bridge forces annually inspect other bridge structures, such as overhead highway bridges, bridge structures on industry-owned tracks served by CSXT, culverts, and tunnels.

On April 28, 1997, CSXT issued a bulletin which provided instructions regarding the inspection of bridges, culverts, and tunnels. These instructions established a minimum frequency for inspections of bridge structures . The bulletin stated that all bridges should be inspected annually; and certain types of structures, such as pin-connected truss spans and moveable bridge spans, should receive more frequent inspections. Many times, certain bridges, culverts, and tunnels required more frequent inspection as conditions warranted.

FRA has a serious concern that the number of personnel available for bridge inspection is not sufficient to perform effective inspections in a timely manner. FRA's concerns were prompted by the collapse of a 190-foot-long truss bridge which occurred during the assessment period. Of the 70 employees designated as Inspectors, only nine are assigned to perform inspections on a full-time basis. The remaining nine district Bridge Engineers, 22 Bridge Supervisors, and 30 agreement bridge employees have other duties that preclude their full-time attention to inspections. In addition, overhead highway bridges, tunnels, and culverts require a considerable level of effort.

Approximately 80 percent of CSXT's 11,000 structures had been inspected in accordance with CSXT's guidelines. CSXT officials stated that the remaining 2,200

bridges
(20 percent) would be inspected before the end of this calendar year.

One purpose of FRA field inspections was to determine if the CSXT bridge inspection reports accurately reflected the actual condition of the bridges. FRA concluded that they did.

Recommendations:

To ensure the integrity of CSXT's bridges and its bridge inspection program, FRA recommends that CSXT:

- Issue written instructions to all personnel performing bridge inspections, requiring them to enter data into the reporting system within seven days of the inspection's completion;

- Add a provision to the inspection reporting system, requiring Bridge Inspectors to record the dates on which inspections are actually performed;

- Develop a method by which bridge inspections could be scheduled using the inspection reporting system, and by which bridges overdue for inspection could be flagged;

- Develop procedures whereby bridge inspection reports noting critical deficiencies would be flagged for particular attention, and remain flagged until the deficiencies were corrected;

- Dedicate sufficient personnel to the function of bridge inspection to ensure that all deficient conditions are detected and corrected before they present a hazard of catastrophic failure; and

- Develop a partnership with FRA, BMWE, and CSXT personnel to further review the bridge inspection concerns and monitor the implementation of the above recommendations.